

What is claimed is:

1. A latch mechanism for releasably securing a first structure to a second structure, said latch mechanism comprising:

a housing adapted to be attached to the first structure;

an actuator pivotally attached to said housing for pivotal movement about a first pivot axis, said actuator being selectively pivotal about said first pivot axis between a first position and a second position;

a handle attached to said actuator, said handle adapted to facilitate pivotal movement of said actuator between said first and second positions;

a follower associated with said actuator, said follower being movable between a third position and a fourth position by said actuator, said actuator adapted to move said follower to said third position when said actuator moves to said first position, said actuator adapted to move said follower to said fourth position when said actuator moves to said second position; and

a bolt member having a first end and a second end, said first end of said bolt member being pivotally attached to said housing for pivotal movement about a second pivot axis between a fifth position and a sixth position, said follower being connected to said bolt member, said follower adapted to pivot said bolt member to said fifth position when said follower moves to said third position and to pivot said bolt member to said sixth position when said follower moves to said fourth position, said second end of said bolt member adapted to engage the second structure when said bolt member is in said fifth position such that said latch assembly is adapted to secure the first structure to the second structure, said second end of said bolt member is adapted to be disengaged from the second structure when said bolt member is in said sixth position.

2. The latch mechanism of claim 1 wherein said housing includes bore and said actuator extends through said bore.

3. The latch mechanism of claim 1 including a seal member located between said housing and said actuator, said seal member creating a seal between said actuator and said housing while allowing said actuator to pivot about said first pivot axis with respect to said housing.

4. The latch mechanism of claim 3 wherein said seal member comprises a gasket formed from an elastomeric material.

5. The latch mechanism of claim 1 wherein said actuator includes a cam, said cam adapted to move said follower to said third position when said actuator is moved to said first position and adapted to move said follower to said fourth position when said actuator is moved to said second position.

6. The latch mechanism of claim 5 wherein said actuator includes a first end and a second end, said cam attached to said second end of said actuator, said first end of said actuator including a side wall, said handle being attached to said side wall.

7. The latch mechanism of claim 1 wherein said handle is pivotally attached to said actuator such that said handle is selectively pivotal about a third pivot axis between a retracted position and an extended position, said handle adapted to facilitate pivotal movement of said actuator member about said first pivot axis when said handle is in said extended position.

8. The latch mechanism of claim 7 wherein said handle is adapted to conjointly pivot with said actuator about said first pivot axis when said handle is in said extended position.

9. The latch mechanism of claim 7 wherein said housing includes a recess adapted to receive at least a portion of said handle when said handle is in said retracted position such that

said housing prevents pivotal movement of said handle and said actuator about said first pivot axis when said handle is in said recess of said housing.

10. The latch mechanism of claim 7 including a biasing member resiliently biasing said handle from said extended position toward said retracted position.

11. The latch mechanism of claim 1 wherein said actuator includes a shaft and a cam attached to said shaft, said cam adapted to move said follower between said third position and said fourth position when said actuator is pivoted between said first position and said second position.

12. The latch mechanism of claim 11 including a retainer member attached to said housing, said actuator being pivotally attached to said retainer member.

13. The latch mechanism of claim 11 wherein said shaft includes an annular groove adapted to receive a seal member.

14. The latch mechanism of claim 11 wherein said cam includes a cam member projecting outwardly from said shaft generally perpendicular to said first pivot axis.

15. The latch mechanism of claim 14 wherein said cam member includes a central axis, said central axis being generally parallel to and offset from said first pivot axis.

16. The latch mechanism of claim 14 wherein said cam member includes an aperture through which said shaft extends, said aperture adapted to rotationally couple said cam member to said shaft for conjoint rotation about said first pivot axis.

17. The latch mechanism of claim 16 wherein said aperture in said cam member is noncircular.

18. The latch mechanism of claim 16 including a collar attached to said cam member, said aperture extending through said collar and said cam member.

19. The latch mechanism of claim 14 wherein said cam member includes a peripheral engagement edge adapted to engage said follower.

20. The latch mechanism of claim 19 wherein said peripheral engagement edge of said cam member is curved.

21. The latch mechanism of claim 5 wherein said follower includes a recess having a first end a second end, said cam being located in said first end of said recess when said actuator is in said first position, said cam being located in said second end of said recess when said actuator is in said second position.

22. The latch mechanism of claim 21 wherein said follower includes a slot in communication with said recess, said cam member rotating within said slot as said cam member pivots between said first position and said second position.

23. The latch mechanism of claim 1 wherein said follower includes a yoke, said yoke including an end wall and a plurality of legs extending outwardly from said end wall, said legs forming a recess adapted to receive said actuator.

24. The latch mechanism of claim 23 wherein said follower includes an abutment member attached to said legs of said yoke, said recess being located between said end wall and said abutment member.

25. The latch mechanism of claim 1 including a link member having a first end and a second end, said first end of said link member being attached to said follower, said second end of said link member being attached to said bolt member.

26. The latch mechanism of claim 25 wherein said follower is movable between said third position and said fourth position along a generally linear translational axis, said second end of said link member being pivotally attached to said bolt member such that said bolt member is

pivotal with respect to said link member about a fourth pivot axis, said fourth pivot axis and said translational axis being generally located in the same plane when said bolt member is in said fifth position.

27. The latch mechanism of claim 1 wherein said follower moves between said third position and said fourth position along a linear translational axis, said translational axis being generally perpendicular to said first pivot axis.

28. The latch mechanism of claim 1 wherein said bolt member includes an arm having a first leg and a second leg disposed at an angle to said first leg, said first leg being attached to said housing and to said follower.

29. The latch mechanism of claim 1 wherein said bolt member includes an arm having a first end and a second end, and an engagement member attached to said second end of said arm, said engagement member adapted to engage the second structure.

30. The latch mechanism of claim 29 wherein said engagement member is selectively positionable with respect to said second end of said arm along a generally linear axis.

31. The latch mechanism of claim 30 wherein said bolt member includes a shaft threadably attached to said second end of said arm member, said engagement member being attached to an end of said shaft.

32. The latch mechanism of claim 1 wherein said second end of said bolt member extends outwardly beyond said housing when said bolt member is in said fifth position, and said second end of said bolt member does not extend outwardly beyond said housing when said bolt member is in said sixth position.

33. A latch mechanism for releasably securing a first structure to a second structure, said latch mechanism comprising:

a housing adapted to be attached to the first structure;

a cam pivotally attached to said housing, said cam adapted to pivot about a first pivot axis between a first position and a second position;

a follower coupled to said housing, said cam adapted to move said follower along a generally linear translational axis between a third position and a fourth position when said cam is pivoted between said first position and said second position, said translational axis being generally perpendicular to said first pivot axis; and

a bolt member having a first end and a second end, said first end of said bolt member being pivotally attached to said housing for pivotal movement about a second pivot axis between a fifth position and a sixth position, said follower being attached to said bolt member such that said follower is adapted to pivot said bolt member to said fifth position when said follower moves to said fourth position and said follower is adapted to pivot said bolt member to said sixth position when said follower moves to said fourth position, said second end of said bolt member adapted to engage the second structure when said bolt member is in said fifth position.

34. The latch mechanism of claim 33 including a link member having a first end pivotally attached to said follower for pivotal movement about a third pivot axis and a second end pivotally attached to said bolt member for pivotal movement about a fourth pivot axis.

35. The latch mechanism of claim 34 wherein said fourth pivot axis and said translational axis of said follower are generally located in the same plane when said bolt member is in said fifth position.

36. The latch mechanism of claim 35 wherein said third pivot axis and said translational axis of said follower are generally located in the same plane.

37. A method for releasably securing a first structure to a second structure, said method comprising the steps of:

providing a latch mechanism having a housing, an actuator pivotally attached to the housing, and a bolt member pivotally to said housing, said bolt member being coupled to said actuator member;

attaching said housing to said first structure;

pivoting said actuator from a first position to a second position;

pivoting said bolt member from an unlatched position to a latched position by said pivotal movement of said actuator from said first position to said second position; and

engaging the second structure with said bolt member when said bolt member is in said latched position.

38. The method of claim 37 including the step of pivoting said actuator from said second position to said first position such that said actuator pivots said bolt member from said latched position to said unlatched position wherein said bolt member is released from the second member.

39. The method of claim 37 including the step of pivoting a handle that is pivotally attached to said actuator from an extended position to a retracted position after pivoting said actuator from said first position to said second position.

40. The method of claim 39 including the step of preventing pivotal movement of said actuator when said handle is in said retracted position.

41. The method of claim 37 including the step of forming a seal between said actuator and said housing.